

Solitary abscess of the spleen

A report of 2 cases

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Summary

Two cases of solitary abscess of the spleen are presented and illustrate the clinical setting and management of this potentially fatal condition. Both patients had presumed bacterial endocarditis with positive blood cultures yet failed to respond to appropriate antibiotic therapy. The clue to diagnosis was elevation of the left hemidiaphragm. Outcome in each case was favourable after splenectomy.

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Solitary abscess of the spleen is extremely rare. Between 1960 and 1980 only 34 cases were described in the world literature.^{1,2} Untreated, all cases are fatal,¹⁻⁴ yet with correct management mortality is less than 10%.² The condition is difficult to diagnose and the clinician should have a high index of suspicion in the presence of the appropriate clinical setting.^{4,5} Pain is present in only 60% of patients and splenomegaly and a splenic rub are even less common. Helpful signs are elevation of the left hemidiaphragm, left pleural effusion, or basal lung infiltrate. The diagnosis is best confirmed by computed tomography (CT) and/or ultrasound examination.⁶⁻⁸

Case reports

Case 1

A 14-year-old schoolgirl who had previously been well presented with a 6-week history of fever and left-sided flank pain. There were no gastro-intestinal, urinary, respiratory or other symptoms of note. Examination revealed a pale, ill-looking patient with a temperature of 38°C. The pulse was collapsing and a sinus tachycardia of 100/min was present. The blood pressure was 110/20 mmHg. The apex beat was not displaced and a murmur of aortic incompetence was audible at the left sternal border. There was no evidence of cardiac failure and no stigmata of infective endocarditis. The respiratory system was normal. The abdomen was soft, with mild tenderness in the left flank. The spleen was not palpable and there was no rub. Urinalysis was negative. The erythrocyte sedimentation rate was 65 mm/1st h (Westergren), the haemoglobin concentration 10 g/dl with normochromic normocytic indices, and the white cell count was $13.4 \times 10^9/l$, of which 65% were neutrophils and 30% lymphocytes. Blood cultures grew *Streptococcus sanguis* sensitive to penicillin and tobramycin. An ECG showed a sinus tachycardia of 100/min and left ventricular

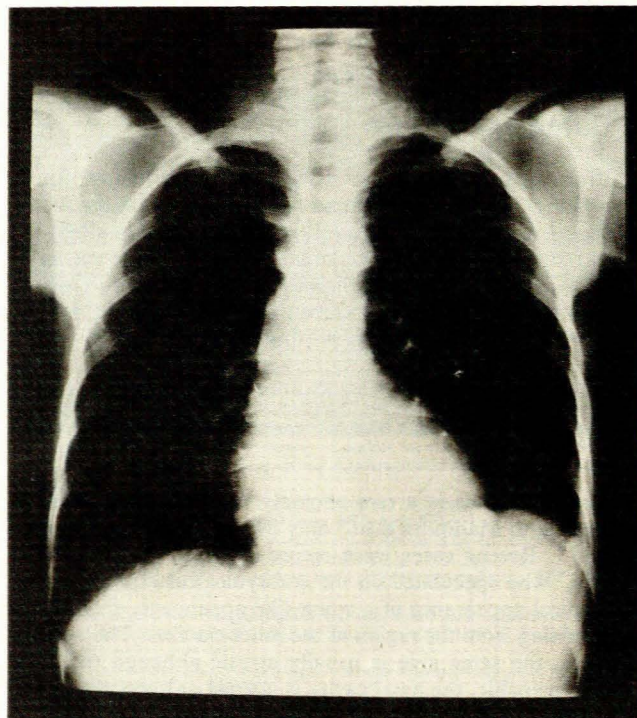


Fig. 1. Postero-anterior chest radiograph demonstrating elevation of the left hemidiaphragm.

hypertrophy. On radiography there was no cardiomegaly and the lung fields were clear, but the left hemidiaphragm was markedly elevated (Figs 1 and 2), with no movement demonstrable on screening. Echocardiography revealed no vegetations.

The patient was treated with intravenous penicillin and tobramycin, but despite adequate blood levels of antibiotic her temperature continued to swing. Further investigation with ultrasound (Fig. 3) and CT of the abdomen (Fig. 4) revealed a cystic lesion in the spleen. Eight days after admission the patient underwent splenectomy. The spleen was slightly enlarged with multiple infarcts and an area of abscess formation. Culture specimens from the splenic abscess grew *Citrobacter* species. After surgery the patient's temperature settled dramatically. Antibiotic therapy was continued to complete a 6-week course, and the patient made an uneventful recovery.

Case 2

A 26-year-old woman with mild mitral stenosis became pyrexial with rigors 8 weeks after a laproscopic sterilization performed through the umbilicus. She complained of generalized malaise with no specific symptoms. On examination the patient's condition was toxic and her temperature was 38°C. There were purpuric lesions on her left palm and right big toe but no other signs of infective endocarditis. The pulse rate was 120/min and the blood pressure 115/80 mmHg. A murmur of mild mitral stenosis was heard with a gallop

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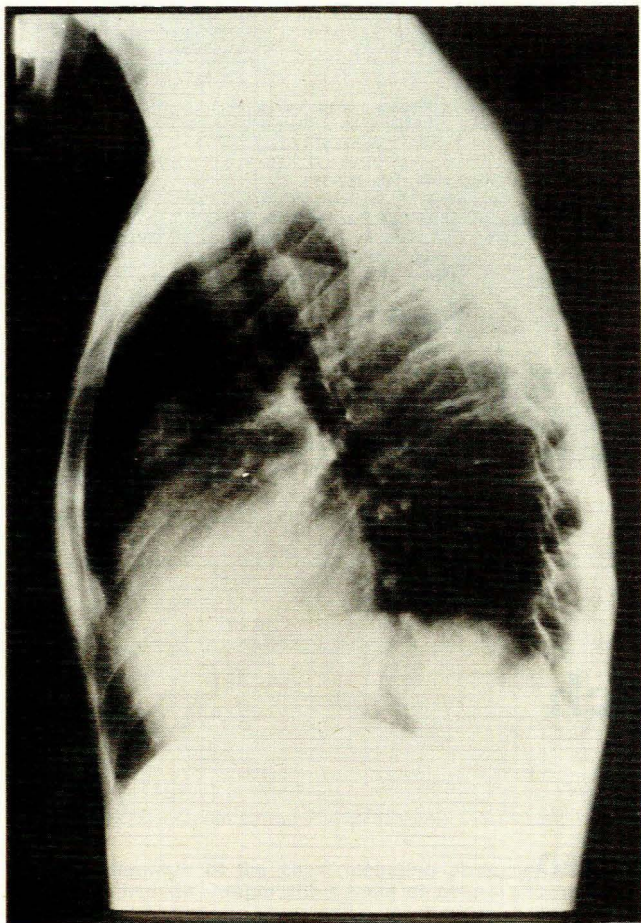


Fig. 2. Lateral chest radiograph showing elevation of the left hemidiaphragm.

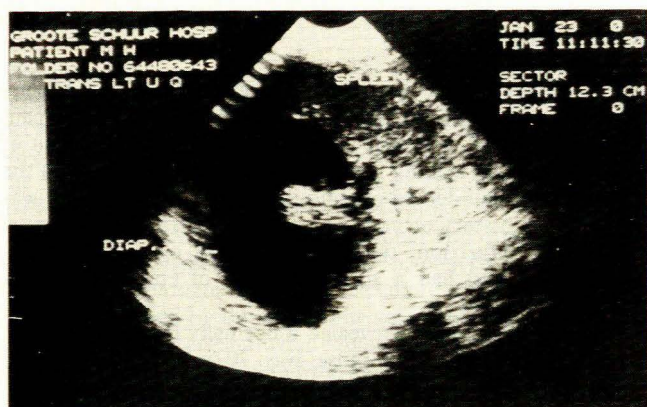


Fig. 3. Ultrasound scan of the abdomen showing a large cystic lesion in the spleen.

rhythm and pericardial friction rub. The respiratory rate was 26/min. Crackles were audible at the left base of the lung. The abdomen was generally mildly tender with a well-healed umbilical scar. The spleen was not palpable.

The erythrocyte sedimentation rate was 142 mm/1st h (Westergren), the haemoglobin concentration 9,8 g/dl with normochromic, normocytic indices, and the white blood cell count was $17,2 \times 10^9/l$, of which 71% were neutrophils. A chest radiograph revealed slight cardiomegaly with an elevated left hemidiaphragm and patchy consolidation at the left base.

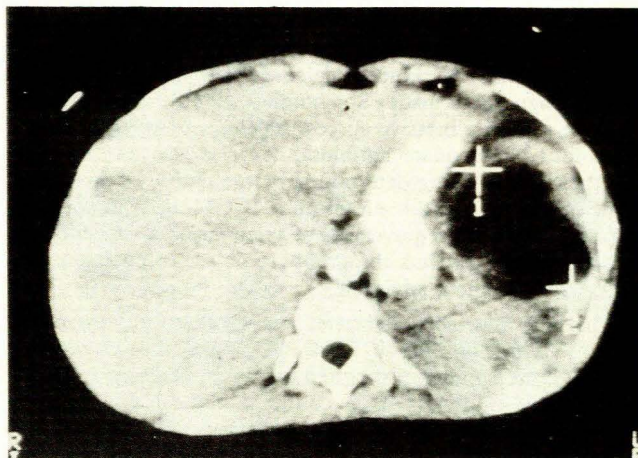


Fig. 4. CT of the abdomen showing the large splenic abscess.

Blood cultures grew *Staphylococcus aureus* sensitive to cloxacillin and fucidin.

Despite treatment with cloxacillin 2 g 6-hourly, fucidin 500 mg 8-hourly and vancomycin 300 mg 8-hourly intravenously, the temperature continued to swing for 1 month. The pericardial friction rub was thought to be due to a septic pericarditis. No vegetations were seen on the heart valves on echocardiography, although clinically the patient was presumed to have infective endocarditis. On screening of the diaphragm there was decreased excursion on the left, and a Gastrografin study showed the stomach to be displaced medially. Ultrasound examination showed a defect in the lower pole of the spleen, and a total body scan suggested a splenic abscess with a separate infarcted area. Splenectomy was performed and a large abscess was found in the spleen with two septic infarcts. The patient's temperature settled but oral cloxacillin and fucidin therapy was continued for a further 3 weeks. She made a complete recovery.

Discussion

The incidence of solitary abscess involving only the spleen is 0,032%.^{1,7} Our cases illustrate the close association between splenic abscess and infective endocarditis.^{1,7} At the turn of the century typhoid, malaria and relapsing fever^{6,7} were the commonest associated disease processes, but today trauma and diabetes mellitus follow endocarditis in order of frequency.^{1,5}

The failure of a patient with infective endocarditis to respond to adequate antibiotic therapy, especially if associated with an elevated left hemidiaphragm, left pleural effusion or basal infiltrate, should motivate the clinician to exclude splenic abscess by CT and/or ultrasound examination. The former is rapidly replacing technetium-99m liver and spleen scanning as the most useful diagnostic test because of its sensitivity and non-invasiveness.^{4,8} The importance of these investigations cannot be overemphasized because the clinical diagnosis is frequently very difficult, and in 20 - 30% of cases the diagnosis is not suspected until autopsy.^{2,7} Pain is present in only 60% of patients and splenomegaly in 40%, and a splenic rub is uncommon.^{1,4}

A wide range of causative organisms have been identified, the commonest being a streptococcus (case 1) or a staphylococcus (case 2).^{2,6} The finding of different organisms in the blood and in the abscess in case 1 is probably related to the extreme sensitivity of the streptococcus to penicillin and the more fastidious nature of *Citrobacter* in a polymicrobial abscess. Correlation between results of blood cultures and culture of

the abscess is approximately 75%, while the rest of the splenic cultures are sterile.⁷

The treatment of choice is splenectomy, performed as soon as the diagnosis is made. Splenotomy should be reserved for the rare case of a massive abscess, where splenectomy may be hazardous.^{4,5} Adequate antibiotic cover is also essential, the duration of this being determined by the nature of the underlying condition, but the minimum is 10 - 14 days. In addition, because of the subsequent risk of pneumococcal infections in splenectomized patients the prophylactic use of pneumococcal polyvalent vaccine is advisable.^{9,10}

The high mortality associated with solitary abscess of the spleen is mainly due to failure to make the diagnosis.^{1,2} Although the number of reported cases has increased recently,⁷ with greater awareness of the condition and the availability of diagnostic techniques such as abdominal CT scanning the prognosis should improve.

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Volvulus of the stomach

A case report

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Summary

A case of gastric volvulus with atypical clinical features is reported. The predisposing aetiological factors and the mechanism of genesis of this very rare condition are discussed. The diagnosis was established by barium meal examination after an unsuccessful gastroscopy. The patient was successfully treated by emergency surgery.

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Stomach volvulus is rare and the exact aetiology unknown in many cases.¹ Certain anatomical defects predispose to gastric volvulus; these include ligamentous laxity, abnormal bands and adhesions, abnormal spaces, para-oesophageal hiatus hernia, congenital diaphragmatic hernia and eventration of the diaphragm.^{1,2} Other cases have been associated with leukaemic splenomegaly and pancreatitis.³ Gastric volvulus is so rare that we have not found any reported case in the southern and eastern African literature. In an analysis of 69 cases of bowel obstruction in Princess Marina Hospital, Gaborone, over a 6-

year period, there was no case of stomach volvulus.⁴ We report a case of gastric volvulus in which the patient presented with atypical clinical features and left basal pneumonia.

Case report

A 32-year-old white man was admitted to Princess Marina Hospital with a 6-hour history of unremitting epigastric pain and vomiting. He reported temporary relief after each bout of vomiting and on leaning forward. He had had a large meal the previous day and denied overindulgence in alcohol. There was no previous history of peptic ulcer, pancreatitis, cholecystitis, myocardial infarction, diverticular disease or hiatus hernia. The patient had had a similar episode of epigastric pain a month earlier.

Physical examination revealed a normally built young man, restless with pain. The pulse was 70/min and the blood pressure 120/100 mmHg. There was mild epigastric tenderness, but the abdomen was not distended. Other systems were normal. A tentative diagnosis of acute gastritis, with a differential diagnosis of acute pancreatitis, was made. A plain erect abdominal radiograph and a chest radiograph showed an elevated left hemidiaphragm with a small left pleural effusion (Fig. 1).

A radiological diagnosis of subphrenic abscess was made. The patient was observed over the next 12 hours; vomiting and epigastric pain persisted and gastroscopy was therefore attempted but abandoned because of repeated vomiting. A barium meal examination showed a volvulus of the stomach (Fig. 2). Emergency laparotomy revealed a mesenterio-axial volvulus of the stomach. The volvulus was reduced, the stomach separated from the transverse colon by dividing the gastrocolic omentum, and gastropexy performed. The postoperative course

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